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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/308,515
Filing Date: August 11, 1999
Appellant(s): BLACK, ROBERT PAUL

Brian Hubbard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/4/2007 appealing from the Office action mailed 7/28/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings that will directly affect or be directly affected by or have a bearing on the Board's decision.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

GB 1 370 296	PEDLER	10-1974
5,725,821	GANNON	3-1998
5,023,131	KWOK	6-1991
4,992,327	DONOVAN	2-1991
3,589,956	KRANZ	6-1971
4,068,036	STANISTREET	1-1978

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-7 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4 - 7 and 10 recite the limitation "cellulosic fiber". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedler (GB 1 370 296) in view of Gannon (US 5,725,821).

Pedler is directed to a non-woven fibrous material pad and method of manufacture (Title).

As to claim 1, Pedler teaches that the non-woven fibrous material pad may be used as padding or insulation in upholstery or clothing (page 2, lines 25-40). Pedler teaches that the non-woven fibrous material can comprise a suitable man-made or synthetic fiber, such as, for example, polyester, acrylic, modacrylic, triacetate or rayon fiber or a mixture of such fibers (page

2, lines 40-47). Therefore, it is the position of the Examiner that the non-woven material, in one embodiment, can comprise a mixture of polyester fibers and rayon fibers.

As to claims 8 and 10, Pedler teaches that the polyester fiber and the rayon fiber may be crimped (page 2, lines 70-90). As saw-tooth crimping is the most common form of crimped fibers, the Examiner equates Applicant's "saw-toothed crimp fiber" to the crimped fiber of Pedler.

Pedler teaches the claimed invention above but fails to disclose the use of lyocell.

Gannon is directed to the process of manufacture of lyocell fiber (Title). Gannon teaches that the lyocell fiber produced by the process of the invention is useful in the manufacture of non-woven articles either alone or in blends with other types of fiber (column 3, lines 44-46). Gannon teaches that non-woven fabrics containing lyocell can be used for applications such as interlinings and apparel fabrics (column 4, lines 40-45). Gannon teaches that it is known in the art that lyocell fibers are known for their impressive textile-physical properties, such as tenacity, in comparison with fibers such as viscose rayon fibers (column 1, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use lyocell fibers as suggested by Gannon in place of the rayon fibers of Pedler motivated by the desire to use fibers with improved physical properties such as tenacity in comparison with fibers such as viscose rayon. It should be noted that tenacity directly relates to strength; high strength is desirable in non-woven articles for durability and other physical properties.

As to claims 4-7, Pedler in view of Gannon discloses the claimed invention except for that the non-woven blend comprises no more than 80% cellulosic fiber as required by claim 4, the non-woven blend comprises 10-60% of cellulosic fiber as required by claim 5, the non-woven blend comprises 20-60% of cellulosic fiber as required by claim 6 and the non-woven blend comprises 25-60% of cellulosic fiber as required by claim 7. It should be noted that the proportion of cellulosic fiber is a result effective variable. As the amount of cellulosic fiber increases, the non-woven fabric will as a whole possess properties similar to cellulose and if the cellulosic fiber content decreases, the non-woven fabric will behave less like the cellulosic fiber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a non-woven blend which comprises no more than 80% cellulosic fiber as required by claim 4, the non-woven blend comprises 10-60% of cellulosic fiber as required by claim 5, the non-woven blend comprises 20-60% of cellulosic fiber as required by claim 6 and the non-woven blend comprises 25-60% of cellulosic fiber as required by claim 7 since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the amount of cellulosic fiber in order to create a fabric that has optimal loft and other properties making it suitable for a padding or insulation material.

5. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedler (GB 1,370,296) in view of Gannon (US 5,725,821) as applied above, and further in view of Kwok (US 5,023,131).

Pedler in view of Gannon teaches the claimed invention above but fails to disclose that the polyester filling fiber is a polyethylene terephthalate fiber as required by claim 2. Additionally, Pedler fails to teach that the polyester fiber comprises a conjugate fiber as required by claim 9.

Kwok is directed to a cotton/polyester fiber blend and batt (Title) useful for fiberfill, insulation, padding, resilient cushioning and the like (column 3, lines 54-55). Kwok teaches that the batt of the invention exhibits excellent washability and high strength (column 3, lines 55-60). Kwok teaches the use of cotton in a blend with other fibers including copolyester binder fibers (column 2, lines 5-10). Kwok teaches that the copolyester fiber can comprise units of ethylene terephthalate (column 1, lines 55-60) as required by claim 2. Kwok teaches that the copolyester fiber can be in sheath-core form or other bicomponent configurations (column 3, lines 1-25). Kwok teaches that for the purposes of the invention cotton can also mean wood pulp and regenerated cellulose such as rayon (column 2, lines 18-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use polyethylene terephthalate fiber as the polyester filling fiber as suggested by Kwok in the pad of Pedler in view of Gannon motivated by the desire to create a bonded pad which exhibits excellent washability and high strength.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use conjugate polyester fibers as the polyester filling fiber as suggested by Kwok in the pad of Pedler in view of Gannon motivated by the desire to bond the pad within a desired temperature range provided by the sheath component while maintaining pad integrity and strength provided by the core component.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan (US 4,992,327) in view of Gannon (US 5,725,821).

Donovan is directed to synthetic down (Title). Donovan teaches a thermal insulating material comprising macrofibers and microfibers (column 2, lines 5-20). The micro fibers and macrofibers may be selected from polyester, rayon and other fibers (column 2, lines 30-40). Therefore, in one embodiment, the micro fibers could comprise polyester and the macrofibers could comprise rayon. Donovan teaches that the assemblage of the macrofibers and microfibers may in the form of clusters or balls (column 4, lines 30-40). The Examiner equates the clusters or balls to Applicant's "non-woven blend" of fiberballs.

Donovan teaches the claimed invention above but fails to disclose the use of lyocell.

Gannon is directed to the process of manufacture of lyocell fiber (Title). Gannon teaches that the lyocell fiber produced by the process of the invention is useful in the manufacture of non-woven articles either alone or in blends with other types of fiber (column 3, lines 44-46). Gannon teaches that non-woven fabrics containing lyocell can be used for applications such as interlinings and apparel fabrics (column 4, lines 40-45). Gannon teaches that it is known in the art that lyocell fibers are known for their impressive textile-physical properties, such as tenacity, in comparison with fibers such as viscose rayon fibers (column 1, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use lyocell fibers as suggested by Gannon in place of the rayon fibers of Donovan motivated by the desire to use fibers with improved physical properties such as tenacity in comparison with fibers such as viscose rayon. It should be noted that tenacity directly relates to strength; high strength is desirable in non-woven articles for durability and other physical properties.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwok (US 5,023,131) in view of Gannon (US 5,725,821).

Kwok is directed to a cotton/polyester fiber blend and batt (Title) useful for fiberfill, insulation, padding, resilient cushioning and the like (column 3, lines 54-55). Kwok teaches the use of cotton in a blend with other fibers including copolyester binder fibers (column 2, lines 5-10). Kwok teaches that for the purposes of the invention cotton can also mean rayon (column 2, lines 18-20). The Examiner equates the copolyester binder fibers to Applicant's "polyester filling fiber". Kwok teaches that typically the batt will be formed from several layers of card-formed web of the blend, by crosslapping the web on a moving apron to the batt thickness desired (column 3, lines 25-30).

Kwok teaches the claimed invention above but fails to disclose the use of lyocell.

Gannon is directed to the process of manufacture of lyocell fiber (Title). Gannon teaches that the lyocell fiber produced by the process of the invention is useful in the manufacture of non-woven articles either alone or in blends with other types of fiber (column 3, lines 44-46). Gannon teaches that non-woven fabrics containing lyocell can be used for applications such as interlinings and apparel fabrics (column 4, lines 40-45). Gannon teaches that it is known in the

art that lyocell fibers are known for their impressive textile-physical properties, such as tenacity, in comparison with fibers such as viscose rayon fibers (column 1, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use lyocell fibers as suggested by Gannon in place of the rayon fibers of Kwok motivated by the desire to use fibers with improved physical properties such as tenacity in comparison with fibers such as viscose rayon. It should be noted that tenacity directly relates to strength; high strength is desirable in non-woven articles for durability and other physical properties.

(10) Response to Argument

A. ***Whether Claims 4-7 and 10 are properly rejected under 35 USC §112, second paragraph, as lacking antecedent basis for reciting "the cellulosic fibre."***

The applicant asserts that claims are not indefinite because the scope of the claim is readily ascertainable. The examiner respectfully disagrees. Claim 1 is drawn to a non-woven blend comprising lyocell fiber, while claims 4-7 and 10 are drawn a non-woven blend comprising cellulosic fiber. The scope of claims 4-7 and 10 is indefinite because it is not clear if the claims cover all forms of cellulose or just the more specific form of lyocell. It is not clear if the dependent claims are claiming a broader invention than that defined in the independent claim.

B. Whether Claims 1, 4-8, and 10 are properly rejected under 35 USC §103 as obvious over the Pedler reference in view of the Gannon reference.

a) Claim 1

The appellant asserts that unexpected improved breathability results rebut *prima facie* obviousness. The examiner respectfully disagrees for a plurality of reasons:

1) The appellant asserts that lyocell fibers blended with polyester fibers unexpectedly give rise to a product with improved breathability compared to polyester fiber alone, but the appellant fails to compare the claimed invention with the closest prior art (Pedler). Evidence of unexpected results must compare the claimed invention with the closest prior art, which is a blend of polyester and rayon (cellulose) fibers (MPEP 716.02).

2) Any differences between the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. Therefore, the appellant not only fails to compare the claimed invention with the closest prior art, the appellant fails to address the issue of whether the properties differ to such an extent that the difference is really unexpected.

The appellant asserts unexpected "down like feel" results rebut *prima facie* obviousness. The examiner respectfully disagrees for a plurality of reasons:

1) The appellant asserts that lyocell fibers blended with polyester fibers unexpectedly give rise to a product with down like feel compared to polyester fiber alone, but the appellant fails to compare the claimed invention with the closest prior art (Pedler). Evidence of

unexpected results must compare the claimed invention with the closest prior art, which is a blend of polyester and rayon (cellulose) fibers (MPEP 716.02).

2) Any differences between the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. Therefore, the appellant not only fails to compare the claimed invention with the closest prior art, the appellant fails to address the issue of whether the properties differ to such an extent that the difference is really unexpected.

The appellant asserts that there is no motivation to combine Pedler with Gannon because Gannon seeks to reduce the degree of polymerization (D.P.) of cellulose, which results in a reduction in fiber tenacity and because higher temperatures generally produce greater degrees of fibrillation. The examiner respectfully disagrees for a plurality of reasons:

1) Regardless of whether one skilled in the art would be motivated to use the lyocell fibers produced by the inventive process disclosed in Gannon (disclosure after column 1), one skilled in the art would be motivated to use conventional lyocell fibers (column 1, lines 25-28) motivated by the desire to use fibers with improved physical properties such as tenacity in comparison with fibers such as viscose rayon.

2) Even assuming *arguendo*, that the disclosure of column 1, lines 25-28 had to be ignored by one skilled in the art, one skilled in the art would still be motivated to use the lyocell fibers produced by the inventive process disclosed in Gannon (disclosure after column 1) because both fibers may have the same degree of polymerization. Gannon discloses that the D.P. of cellulose used in the manufacture of known lyocell fiber is commonly in the range of 400 to

700 while the D.P. of cellulose used in the manufacture of lyocell according to the method of the invention is less than or equal to 400 (column 2, lines 38-50). Therefore, known lyocell and lyocell of the invention may share the same D.P. of 400, resulting in lyocell of the invention possessing the referred to higher tenacity compared to rayon fibers. One skilled in the art would be motivated to use lyocell fibers of the invention, motivated by the desire to use fibers with improved physical properties such as tenacity in comparison with fibers such as viscose rayon.

3) Even assuming *arguendo*, that the disclosure of column 1, lines 25-28 had to be ignored by one skilled in the art, one skilled in the art would still be motivated to use the lyocell fibers produced by the inventive process disclosed in Gannon (disclosure after column 1) because lyocell fibers of the invention may be used in blended combination with standard lyocell fibers (column 3, lines 44-59 and column 4, lines 52-61). One skilled in the art would be motivated to use a blend of lyocell fibers of the invention with standard lyocell fibers, motivated by the desire to use fibers with improved physical properties such as tenacity in comparison with fibers such as viscose rayon.

4) Even assuming *arguendo*, that the disclosure of column 1, lines 25-28 had to be ignored by one skilled in the art, one skilled in the art would still be motivated to use the lyocell fibers produced by the inventive process disclosed in Gannon (disclosure after column 1) because lyocell fibers of the invention provide desirable fibrillated lyocell fibers (column 1, lines 44-56). One skilled in the art would be motivated to use lyocell fibrillated fibers of the invention, motivated by the desire to create high loft, improved cohesion, improved cover, improved strength, and/or desirable aesthetics effects (column 1, lines 44-56 and column 4, lines

52-61). It is noted that Pedler specifically mentions the desirability of high loft (page 2, lines 70-80), which would obviously result from the use of fibrillated fibers.

b) Claims 4-7

The appellant asserts that the claimed ranges are not taught or suggested by the prior art. The examiner respectfully disagrees. Pedler specifically mentions the use of 45% polyester and 55% acrylic fiber (page 2, lines 41-50). Considering that Pedler teaches that acrylic and rayon are viable alternatives (page 2, lines 41-50), Pedler teaches, or at least suggests, that the nonwoven blend may comprise 45% polyester and 55% rayon. The disclosed percentage of 55% is within the claimed ranges.

Even assuming arguendo, that the prior art does not teach or suggest the claimed percentage, as the amount of cellulosic fiber increases, the non-woven fabric will as a whole possess properties similar to cellulose and if the cellulosic fiber content decreases, the non-woven fabric will behave less like the cellulosic fiber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a non-woven blend comprising from 25-60% cellulose, because it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the amount of cellulosic fiber in order to create a fabric that has optimal loft and other properties making it suitable for a padding or insulation material.

In response, the appellant asserts that Gannon is silent regarding loft. The examiner respectfully disagrees. Gannon discloses that the invention provides a process for the manufacture of lyocell fiber with an increased tendency to fibrillation (column 2, lines 2-4). As defined by Gannon, fibrillation refers to fine fibrils becoming partially detached from the fiber, giving a hairy appearance to the fiber (column 1, lines 30-35). Such a fibrillated structure would clearly increase the loft of a fabric otherwise consisting of non-fibrillated fibers.

c) Claim 8

The appellant fails to separately argue the claim, therefore, the claim is rejected for the reasons stated above.

d) Claim 10

The appellant states the assertion that saw-tooth crimping is the most common form of crimped fibers is improper because the fact asserted to be common knowledge in the art is not capable of instant and unquestionable demonstration of being well known. The examiner respectfully disagrees for a plurality of reasons:

1) It is noted that the appellant does not rebut the assertion that saw-tooth crimping is the most common form of crimped fibers. MPEP 2144.03 states that to adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art.

2) Said assertion was first set forth in the non-final rejection mailed on 1/27/2005, but the appellant did not traverse the examiner's assertion in the subsequent response filed on 5/25/2005. MPEP 2144.03 states that if the applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate the art statement is taken to be admitted prior art because applicant failed to traverse the examiner's assertion of official notice.

C. Whether Claims 2 and 9 are properly rejected under 35 USC §103 as obvious over the Pedler reference in view of the Cannon reference, further in view of the Kwok reference.

a) Claim 2

It is noted that the spelling of polyethyleneterephthalate was objected to in the final rejection because polyethylene terephthalate (PET) is misspelled.

The appellant asserts that Kwok fails to teach or suggest a polyethylene terephthalate (PET) fiber because Kwok discloses a copolymer fiber comprising ethylene terephthalate. The examiner respectfully disagrees.

The appellant appears to be arguing that the fiber disclosed by Kwok cannot correspond to the claimed fiber because the fiber comprises an additional component (isophthalate). The examiner respectfully disagrees. The current claim does not include closed claim language (consisting of) or in any way exclude the presence of an isophthalate component.

The appellant asserts that Kwok is not readily combinable with Pedler because Kwok teaches a natural cotton and polyester fiber blend while Pedler teaches away from the use of natural fibers. The examiner respectfully disagrees. The appellant is referring to an embodiment (natural cotton and polyester) that is not specifically relied upon to reject the claims. Rather, the

polyester and rayon fiber blend embodiment disclosed by Kwok is relied upon to reject the claims. Since Pedler specifically mentions the use of polyester and rayon, the references are properly combinable.

The appellant asserts that there is no motivation to combine Pedler or Kwok with Gannon because Gannon seeks to reduce the degree of polymerization (D.P.) of cellulose, which results in a reduction in fiber tenacity. The examiner respectfully disagrees for the reasons stated above for Claims 1, 4-8, and 10.

b) Claim 9

The appellant asserts that Kwok fails to teach or suggest the claimed conjugate fibers, as defined in the specification. The examiner respectfully disagrees.

Kwok specifically discloses that bicomponent fibers disclosed in USPN 3,589,956 and USPN 4,068,036 may be used (column 3, lines 10-19). Both USPN 3,589,956 (column 3, lines 17-21) and USPN 4,068,03 (column 1, lines 22-45) specifically refer to side-by-side bicomponent fibers. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the bicomponent fibers in any suitable bicomponent configuration, such as side-by-side, because is within the general skill of a worker in the art to select a known bicomponent configuration on the basis of its suitability and desired characteristics. The side-by-side fibers would inherently spirally crimp upon heat treatment based on different thermal expansion/contraction coefficients of the two different side-by-side materials.

D. Whether Claim 11 is properly rejected under 35 USC §103 as obvious over the Donovan reference in view of the Gannon reference.

The appellant asserts that there is no motivation to combine Donovan with Gannon for the same reason there is no motivation to combine Pedler with Gannon. The examiner respectfully disagrees for the reasons stated above for Claims 1, 4-8, and 10.

E. Whether Claim 12 is properly rejected under 35 USC §103 as obvious over the Kwok reference in view of the Gannon reference.

The appellant asserts that there is no motivation to combine Kwok with Gannon for the same reason there is no motivation to combine Pedler with Gannon. The examiner respectfully disagrees for the reasons stated above for Claims 1, 4-8, and 10.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

atp

ANDREW PIZIALI
PRIMARY EXAMINER

Conferees:

Terrel Morris

JENNIFER MICHENER
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Jennifer Michener